

in 1909. Besides his theological studies, he was a constant student of astronomy and derived much pleasure from the meetings and publications of the Society. For the last three years of his life he was a helpless invalid and was quite blind towards the last. He died on 1913 February 1.

He was elected a Fellow of the Society 1906 January 12.

EDMUND LEDGER was born in London in 1841 September. He was educated at the City of London School, and at Corpus Christi College, Cambridge; he graduated as Fourth Wrangler in 1863. He was also University Scholar of London University. He was elected Fellow of his Collège shortly after taking his degree, and remained in residence in Cambridge till 1866, when he accepted the Collège living of Duxford, Cambridgeshire. He was Rector of Barkham, Ipswich, from 1877 to 1898, when he retired,—afterwards spending the winters at Reigate, and the summers at a cottage near Leith Hill, Dorking. Mr. Ledger acted for many years as an Examiner for the Cambridge Local Examinations. He was Professor of Astronomy at Gresham College from 1875 to 1908, where his lectures drew crowded audiences.

He was the author of *The Sun, Planets and their Satellites*, and of several articles in the *Nineteenth Century* on astronomical subjects.

Mr. Ledger was married, but had no family. He died at Reigate on December 18.

He was elected a Fellow of the Society 1876 February 11.

JONADAB MCCARTHY, an Irishman by descent, was born at Cheltenham on 1841 December 15. He was for some time a schoolmaster; but, being a man of great imagination and powers of initiative, he early grasped the possibilities of development afforded by his native town. He was the first to commence alterations to existing property on an extensive scale and to acquire important sites, which eventually became of great value. Mr. McCarthy came to London in 1893, and was afterwards a familiar figure in the meetings of the Society. He took a genuine interest in astronomy, and, being an omnivorous reader, there were but few branches of the subject which he had not studied. He had an exceptionally good memory, and is said to have known Milton's *Paradise Lost* by heart.

At the age of twenty-three he married Emma, daughter of M. H. Goldingham, solicitor. She survives him, together with five sons and three daughters.

He died at West Kensington 1913 October 13.

He was elected a Fellow of the Society 1882 November 10.

FRIEDRICH WILHELM RISTENPART was born in Frankfort-on-Main on 1868 June 8. In early years, while still a pupil at the Gymnasium in Frankfort, he was very much interested in astronomical questions. After leaving school in 1886, he went to the

Universities of Jena and Strassburg, where he pursued his astronomical studies with great zeal. By his thesis presented to Strassburg University for the degree of Ph.D., entitled: "Untersuchungen über die Constante der Praecession und die Bewegung der Sonne im Fixsternsysteme," he entered that range of studies to which he was afterwards almost exclusively devoted, viz. the classical stellar astronomy.

At the end of the year 1891 he became assistant to Professor Valentiner, of the Karlsruhe Observatory. Here and at Heidelberg, to which town the Observatory was transferred in 1896, he took an active part in the numerous observations made at that Institution.

In writing the dissertation above mentioned, he perceived the inconvenience and fruitless waste of time caused by the use of various star catalogues based on different equinoxes. He therefore conceived the idea of uniting into a general catalogue all the positions of fixed stars then in existence. In several letters which passed between him and Auwers the outlines of this work were drawn, and the Prussian Academy of Sciences subsequently granted Ristenpart the subsidies necessary for examining the possibility of the gigantic scheme.

In the beginning of 1898 Ristenpart had accepted a call to the Observatory of Kiel, where the Director, Harzer, most generously left him time enough for the preparation of the *Geschichte des Fixsternhimmels*. The usefulness and possibility of the undertaking having been proved, Ristenpart, in 1900 October, obtained a scientific appointment at the Academy in Berlin, and was entrusted with an office which was under the supervision of a special Committee of the Academy. The first outcome of his work there was the *Fehlerverzeichniss zu den Stern-Catalogen des 18. und 19. Jahrhunderts*, in which were noted, out of more than 400 star catalogues, all gross errors and many small ones, which were found by him and his collaborators while he was collecting the positions of the stars.

Another work may be mentioned here. If one has to transfer a considerable number of star positions from a certain equinox to another one, the calculation of the usual precession values as coefficients of a series progressing according to powers of the intermediate time is not so convenient as a development according to powers of the tangents of declination, as first shown by Weiss. This method has often been employed in the office of the *Geschichte des Fixsternhimmels*, and Ristenpart took great pains to obtain for it more favour among astronomers by calculating useful tables and by proposing to introduce normal equinoxes, *e.g.* every 50 years.

Another proposal he made had reference to the publication of planet and comet observations. He proved that it is admissible to consider as *mean* comet-place the sum of *mean* star-place and *apparent* difference of co-ordinates. By this method one can save half the calculation of reduction to apparent place.

In 1904 Ristenpart was admitted as Privatdocent of Berlin University, where he found much pleasure in teaching. Now and then he made observations at the Urania Observatory. His predilection for observing activity caused him to accept an invitation to the directorship of the National Observatory, Santiago de Chile, where he found a vast sphere for work. This Observatory was in such a desolate state when he went to Chile that even the amplest reforms could not make it a perfect institution. He therefore advocated the building of a large new Observatory on the site of Lo Espejo, outside of the town. His proposals met with much favour from the Chilian Government, and his projects were especially furthered by the President, Don Pedro Montt. This public-spirited man was greatly interested in all sciences, and he generously helped Ristenpart to overcome the considerable financial difficulties.

Ristenpart then began to educate a staff of observers and computers for the varied work of the Observatory. Several great series of observations with the meridian circle, the refractor, and the transit instrument were started. At first all went well, and the progress of his work was astonishing. But when, on 1910 August 16, Pedro Montt suddenly died, the organisation of the Observatory had lost its most active friend and promoter. Owing to the other difficult tasks to be fulfilled by a young country, the interest of the leaders soon waned, and in the last year Ristenpart could scarcely obtain the means necessary for continuing the work which he had already established. His working power, formerly almost without limits, now failed him; his health became more and more precarious, and the prospect of seeing all his projects and hopes wrecked may have caused him to estimate his life worthless. On the morning of 1913 April 9 he voluntarily sought death.

Ristenpart was twice married. He leaves a widow, a son, and three young daughters.

He was elected a Fellow of the Royal Astronomical Society 1912 June 14.

[For the above notice the Council are indebted to Dr. Prager, who was formerly assistant to Dr. Ristenpart at Santiago.]

DAVID SMART was born at Welwyn in Hertfordshire on 1848 September 18. In 1850 his parents left Welwyn for Lakenheath, Suffolk, where, as a little boy, he delighted in watching the stars and took the greatest interest in anything connected with astronomy. He could read at three years of age. His first school was at Stamford in Lincolnshire; from there he went to Denmark Hill Grammar School, and for a short time to Cranbrook Grammar School when he lived in that town. From there he entered as a student at St. Bartholomew's Hospital; he never failed at an examination, and passed his M.R.C.S. Eng. and L.R.C.P. Lond. as soon as he was twenty-one years of age. Having been elected resident House Surgeon to the Surrey Dispensary, he was obliged to take his L.S.A.